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Effects of Own and Spousal Disability on Loneliness Among Older Adults

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Objectives: This study examines the effects of own and spousal disability on social and emotional loneliness among married adults aged 65 and older. **Method**: Data from 710 men and 379 women of a Dutch community sample were analyzed with linear regression analyses. **Results**: For men, only their wives' disability was related to higher levels of social loneliness, whereas for women mainly their own disability was related to higher levels of social loneliness. Own disability and spousal disability were related to higher levels of emotional loneliness among both men and women. Effects of disability remained unaffected after controlling for characteristics of the social network and the marital relationship. **Discussion**: Findings underscore the importance of considering effects of both spouses' health on measures of individual well-being. Also, the traditional division of social roles makes older married men relatively vulnerable to social loneliness when their wives suffer from disability.

Keywords: *own and spousal disability; emotional loneliness; social loneliness; gender*

Disabling health problems can have a negative impact on various aspects of individual well-being. Disability involves a reduction or loss of function and difficulty in performing activities of normal daily living, such as walking or reading (Lyons, Sullivan, Ritvo, & Coyne, 1995). Because disabling health problems are often associated with the loss of independence and autonomy, they affect not only the lives of the disabled but also the lives of those who are close to them. For married older adults with a disability, the spouse is affected the most (Johnson, 1983). Depending on

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the severity of the disability of the disabled spouse, the nondisabled spouse must, for instance, assume more responsibilities for previously shared activities. Overall, both spouses need to adjust to significant role changes because of one spouse's disabling health problems. Therefore, one's own and one's partner's disabling health problems can negatively influence someone's well-being.

To consider both spouses' health is especially relevant for older adults. Older couples are particularly at risk for disability of *both* spouses for two reasons. First, both spouses of the older couple have an increased risk for disabling health problems because of the increased longevity for both men and women. Second, caring for a disabled spouse is a risk factor for one's own health (Burton, Zdaniuk, Schulz, Jackson, & Hirsch, 2003; Schulz & Beach, 1999). Once the nondisabled spouse assumes more care responsibilities, he or she is particularly at risk for developing health problems.

Several studies have shown that considering both spouses' health is important for individuals' well-being in later life. These studies have shown, for instance, that depressive symptoms in one older spouse influence those of the other (e.g., Bookwala & Schulz, 1996; Peek, Stimpson, Townsend, & Markides, 2006; Siegel, Bradley, Gallo, & Kasl, 2004; Tower & Kasl, 1996). Other studies have shown evidence that both spouses' physical health is associated with psychological well-being. For example, Hagedoorn et al. (2001) found that the presence of own and spousal chronic diseases were independently related to one's own psychological distress among older women. In addition, Stimpson, Eschbach, and Peek (2007) found that the level of spousal chronic conditions, but not their own, was significantly associated with higher levels of depressive symptoms. Finally, Booth and Johnson (1994) showed that a decline in one's own and the spouse's subjective health were independently related to a decline in marital happiness among middle-aged couples.

Research in the field of loneliness, an important measure of social well-being in late life (De Jong Gierveld, 1998; Hughes, Waite, Hawkley, & Cacioppo, 2004), has not focused on the effects of both spouses health yet. Previous studies among older adults did investigate effects of one's own health on one's own loneliness; these studies have consistently shown that own disabling health problems are related to higher levels of loneliness (e.g., Dykstra, Van Tilburg, & De Jong Gierveld, 2005; Essex & Nam, 1987; Jylhä, 2004; Savikko, Routasalo, Tilvis, Strandberg, & Pitkälä, 2005; Wenger, Davies, Shahtahmasebi, & Scott, 1996). In addition, results of a few other studies suggest that spousal disability is associated with higher levels of loneliness (Beeson, 2003; Foxall & Ekberg, 1989). However, to our knowledge,

no study has investigated the impact of effects of own and spousal health problems on loneliness among older married adults. The present study fills this gap by examining the impact of own and spousal disability on social and emotional loneliness.

Loneliness is defined as an unpleasant and distressing subjective experience that results from deficiencies in a person's social relationships (Peplau & Perlman, 1982). The general concept of loneliness can be distinguished in social and emotional aspects of loneliness (Weiss, 1973). Social loneliness is related to deficits in social integration and embeddedness, whereas emotional loneliness is linked to the absence of an intimate attachment figure (e.g., a partner or best friend; Dykstra & De Jong Gierveld, 2004; Van Baarsen, Snijders, Smit, & Van Duijn, 2001; Van Tilburg, Havens, & De Jong Gierveld, 2004). Social loneliness can be characterized by the experience of dissatisfaction with contact with people out of a broader social network (e.g., family, friends, and neighbors). Emotional loneliness can be characterized by intense feelings of emptiness and abandonment.

Effects of Own and Spousal Disability on Social Loneliness

Social loneliness is known to be related to aspects of personal relationships such as the size of the social network and social support exchanges (e.g., De Jong Gierveld, 1998; Dykstra et al., 2005; Hughes et al., 2004). In general, it can be expected that own disability negatively influences these characteristics because health problems involve restrictions in the maintenance of someone's personal relationships (Van Tilburg & Broese van Groenou, 2002). This leads to the expectation that own disability will be related to higher levels of social loneliness. With regard to spousal disability, a similar argumentation can be applied. Spousal disability may restrict someone's own opportunities to maintain social relationships because of increasing responsibilities such as spousal caregiving. So it can also be expected that spousal disability will be related to higher levels of social loneliness.

Gender differences in social roles may involve different effects of own and spousal disability on social loneliness for men and women. Traditionally, women are socialized to be nurturing and family oriented. Women are doing more family work and more often fulfill the role of kinkeeper (Dykstra & De Jong Gierveld, 2004; Rosenthal, 1985). For men, their spouses often fulfill the link to their network of family and friends (Antonucci, 2001). In addition, men more strongly rely on their spouse for social support, whereas women derive support from family, friends, and neighbors in addition to their partner (Antonucci & Akiyama, 1987; Cutrona, 1996; Stevens & Westerhof, 2006).

Based on these gender differences, women will be especially restricted in their activities to maintain social relationships because of own and spousal disability. Men will be indirectly disadvantaged when their wives are restricted in the activities for the maintenance of their social network.

This gender difference in social roles can result in gender differences in the effects of own and spousal disability on social loneliness. However, such gender differences will arise only when the effects of own disability and spousal disability are of unequal strength. We have no explicit expectations about the difference in strength of both, but for the purpose of illustration we assume that women's own disability will restrict them more strongly in their social activities than will spousal disability. Then, for women, own disability will be more strongly related to social loneliness than will spousal disability. But for men, the reverse will be true because spousal disability will prevent men from taking advantage of their wives' activities in the maintenance of their social network.

Effects of Own and Spousal Disability on Emotional Loneliness

Emotional loneliness, which refers to the relationship with an intimate attachment figure, can be associated with quality or deficits in the marital relationship. In general, disabling health problems can impose substantial strain on the marital relationship and negatively affect marital quality. These negative effects may involve deficits in the attachment function and the nature of the marital relationship. Disabling health problems can make emotional closeness and intimacy more difficult because of factors such as lack of spontaneity and problems with sexuality (Lyons et al., 1995). In addition, decreases in the number of shared activities and problematic behavior of the disabled spouse can have negative effects on the quality of the marital relationship (Booth & Johnson, 1994). Irritability of the disabled spouse may lead to frustrations and anger in the well spouse, which can result in feelings of frustrations and resentment of both partners. This negative process may significantly interfere with the exchange of social support within the couple: Each partner stands to lose the support of the other (Cutrona, 1996). Thus, it is reasonable to expect that own disability and spousal disability will negatively influence the nature and quality of the marital relationship and therefore will be related to higher levels of emotional loneliness.

Possible gender differences in the effects of own and spousal disability on emotional loneliness are hard to predict. At least two different factors may play a role. First, because men more strongly rely on their partner than

do women, it can be expected that the effects of spousal disability on emotional loneliness will be stronger for men. Second, women appear to be more sensitive to spousal support and marital quality than are men (Acitelli & Antonucci, 1994; Cutrona, 1996). Adverse effects on marital quality because of own or spousal disability would result in a stronger impact on emotional loneliness for women; this leads to the prediction that the effects of own or spousal disability on emotional loneliness will be stronger for women. These two factors have opposite gender effects with regard to the effects of spousal disability on emotional loneliness. Overall, we have no clear expectations about gender differences in the effects of own and spousal disability on emotional loneliness, but we will explore them.

Research Questions

In sum, this study adds to our understanding of how both spouses' health is related to feelings of social and emotional loneliness. The research questions of the present study are the following: (a) What is the impact of own and spousal disability on social and emotional loneliness among older married adults? (b) Are the effects of own and spousal disability on social and emotional loneliness different for older married men and women? (c) Can the effects of own and spousal disability on social loneliness be explained by the size of the social network and social support exchanges with persons out of the social network? (d) Can the effects of own and spousal disability on emotional loneliness be explained by social support exchanges within the marital relationship? To answer these questions, we used a community sample of Dutch older married men and women, aged 65 and older. Respondents reported about their own and their spouse's disability, about their own loneliness, and about various characteristics of their social network and their marital relationship.

Method

Participants

In 1992, interviews were conducted with 4,494 respondents in the context of the Living Arrangements and Social Networks of Older Adults study (Knipscheer, De Jong Gierveld, Van Tilburg, & Dykstra, 1995). A stratified random sample of older men and women (aged 55 to 89 years) was drawn from the population registries of three geographic areas of the Netherlands. These three regions can be taken to represent differences in religion and

urbanization in the Netherlands. The oldest people, and particularly the oldest men, were overrepresented in the sample. The response rate was 62%.

For the present study, we aimed to obtain a study sample in which the prevalence of disabling health problems is relatively high. For this purpose, we selected respondents with a partner aged 65 or older. Next, because other people can influence the impact of own and partner's disability on feelings of someone's loneliness, we included only respondents who were living in a noninstitutionalized household with their partner only. Finally, possible effects of health problems on loneliness may interact with partner history because partner history is related to characteristics of the social network (De Jong Gierveld & Peeters, 2003) and to feelings of loneliness (Dykstra & De Jong Gierveld, 2004). Therefore, to obtain a homogeneous group of respondents, we selected those who were married with their partner and who were in their first marriage. This resulted in a sample size of 1,172 respondents. Missing data in the study variables further reduced the study sample to 1,089 respondents, including 710 men and 379 women.

Measurements

Social and emotional loneliness. Loneliness was assessed by an 11-item scale (De Jong Gierveld & Van Tilburg, 1999). This scale consists of two subscales, one for social loneliness and one for emotional loneliness (Van Baarsen et al., 2001). The subscale of social loneliness includes five positively formulated items, such as "I can call on my friends whenever I need them." The subscale of emotional loneliness includes six negatively formulated items, such as "I experience a general sense of emptiness." The response categories were *no*, *more or less*, and *yes*. For each subscale, the scores were dichotomized so that *more or less* was considered as experiences of loneliness. For the positively phrased items, the scores were reversed. Item scores were summed into scale scores. Scale scores ranged from 0 to 5 for social loneliness and from 0 to 6 for emotional loneliness, with higher scores indicating more loneliness. Cronbach's alpha for social loneliness was .72 and .70 for men and women, respectively. Cronbach's alpha for emotional loneliness was .74 and .83 for men and women, respectively. The correlation between the two subscales was .32 ($p < .001$) and .54 ($p < .001$) for men and women, respectively.

Own and spousal disability. Respondents reported about their own and their spouse's disability. Disability was measured with four items. These items assessed whether they could do activities of daily living (walk up and

down stairs, walk for 5 minutes outdoors without resting, sit down and stand up from a chair, dress and undress). The five possible answers were *without difficulty, with some difficulty, with a great deal of difficulty, only with help,* and *not at all*. Scale score range from 0 to 16, with higher scores indicating more disability. Cronbach's alpha for own disability was .77 and .85 for men and women, respectively. Cronbach's alpha for spousal disability was .84 and .81 for men and women, respectively. The correlation between own disability and spousal disability was .04 ($p = .31$) and .15 ($p < .01$) for men and women, respectively.

Characteristics of the social network and the marital relationship. The social network of the respondent was identified by using the procedure based on Cochran, Larner, Riley, Gunnarson, and Henderson (1990). Network members of 18 years and older in seven domains (household members, children, other relatives, neighbors, contacts through work and classes, members of organizations, and others) were identified. For each domain, respondents were requested to specify the names of those with whom they had important and regular contact. A respondent's *network size* is the number of all persons identified by this procedure, excluding the spouse. The size of the social networks ranged from 0 to 59 for men and from 0 to 45 for women.

For the spouse and for 11 members next to the spouse (or fewer, if fewer members were identified) with whom contact was most frequent, emotional and instrumental support exchanges were assessed. In the present study, we included only the giving of support as an explanatory variable because giving support and receiving support are highly correlated because of the reciprocal nature of social support exchanges. In addition, it is clear that restrictions in the maintenance of social contact because of health problems can be indicated by lower levels of providing support and therefore could explain higher levels of loneliness with more disability. In contrast, effects of disability on the receipt of support can diverge in two opposite directions. Disability can result in receiving less support because of restrictions in the maintenance of social contact, which could explain higher levels of loneliness. However, disability can also result in receiving more support because of increased needs and the mobilization of helpers; in this case, the receipt of support could suppress higher levels of loneliness with more disability.

For emotional support given, this question was asked: "How often did it occur in the last year that [name network member] told you about your personal experiences and feelings?" For instrumental support given, this question was asked: "How often did it occur in the last year that you helped

[name network member] with daily chores in and around the house, such as prepare meals, clean the house, transportation, small repairs, fill informs?" The answer categories were *never*, *seldom*, *sometimes*, and *often*, which were assigned values of 0, 1, 2, and 3, respectively. We computed the mean frequency of given emotional and instrumental support across all various relationships of the social network. These means ranged from 0 (*no relationships or all relationships are never supportive*) to 3 (*all relationships are often supportive*). For the marital relationship, we used the frequency of given emotional and instrumental support to the spouse, which also ranged from 0 (*never*) to 3 (*often*).

Procedure

Linear regression analyses were conducted to investigate the effects of own disability and spouse's disability on the two dependent variables (emotional loneliness and social loneliness). Analyses were carried out separately for men and women to examine possible gender differences in effects of own and spouse's disability on loneliness. To examine whether both spouses' disability had independent effects on loneliness, we ran separate models for own disability (Model 1) and spouse's disability (Model 2) before we entered both variables together in the analyses (Model 3). In the third model, the regression coefficients show the effect of one spouse's disability controlling for the effect of the disability of the other spouse. Both unstandardized and standardized regression coefficients are reported. Unstandardized regression coefficients can be used to compare the strength of effects between men and women. Standardized regression coefficients give insight into the relative strength of the effects as compared to the other variables in the analysis.

The analyses were adjusted for respondent's age because age is known to be related with both disability and loneliness. Age was centered by subtracting the mean from each respondent's age. By this centering, the constant in the regression equation represents the mean value of loneliness for respondents with neither own disability nor spousal disability, controlled for the effect of respondent's age.

To examine whether effects of own and spousal disability on social and emotional loneliness could be explained by differences in characteristics of the social network and the marital relationship, we ran additional analyses (Model 4). In this fourth model, three explanatory variables for the effects of disability on social loneliness were included: the size of the social network, the mean frequency of given emotional support to the social network, and

the mean frequency of given instrumental support of the social network. In addition, two explanatory variables for the effects of disability on emotional loneliness were included: the frequency of given emotional support to spouse and the frequency of given instrumental support to the spouse. As with age, we centered these five variables around their means.

Results

Table 1 shows descriptive information of study variables for men and women. Mean scores of social and emotional loneliness show that the distributions of the loneliness scales were highly skewed. Large proportions of respondents reported no feelings of loneliness. However, the scores on social loneliness and emotional loneliness covered the whole range of the scales. Among men, 50% of respondents reported at least some feelings of social loneliness, and 33% of respondents reported at least some feelings of emotional loneliness. Among women, these percentages were 42% and 38% for social loneliness and emotional loneliness, respectively.

Furthermore, the scores on own disability and spousal disability covered the whole range of the scales, but the distributions were also highly skewed. Among men, 33% of respondents reported that they had at least some difficulty with activities of daily living, and 45% of respondents reported that their spouse had at least some difficulty with activities of daily living. Among women, these proportions were 39% and 32% for own and spousal disability, respectively. Inspection of the scores on own disability and on spousal disability revealed that 18% of the male and 15% of the female respondents reported that they and their spouse had at least some difficulty with activities of daily living.

Comparisons of the mean scores between men and women showed that men reported higher levels of social loneliness but lower levels of emotional loneliness than did women. In addition, men gave less frequent emotional support but more frequent instrumental support to their social network members than did women. Our finding that men reported lower levels of own disability and higher levels of spousal disability confirms the commonly found gender difference in levels of disability in community samples (e.g., Arber & Ginn, 1993; Merril, Seeman, Kasl, & Berkman, 1997).

Analyses of the correlations between own and spousal disability on the one side and characteristics of the social network and the marital relationship on the other side showed that these correlations were in the expected directions; however, the correlations were rather low. For men, higher levels of own disability were related to a smaller social network ($r = -.11$,

Table 1
Characteristics of the Study Sample by Gender

	Men[a]			Women[b]			
	M	*SD*	%	*M*	*SD*	%	*t*
Age (65 to 89)	76.0	6.2		73.0	5.4		8.2***
Social loneliness (0 to 5)	1.1	1.4		0.8	1.3		2.9**
Score 0			50			58	
Score 1 to 2			34			29	
Score 3 to 5			16			12	
Emotional loneliness (0 to 6)	0.7	1.3		1.0	1.6		–2.8**
Score 0			67			62	
Score 1 to 2			24			24	
Score 3 to 6			9			14	
Own disability (0 to 16)	1.0	2.2		1.3	2.6		–2.1*
Score 0			67			61	
Score 1 to 2			20			22	
Score 3 to 5			8			11	
Score 6 to 16			5			6	
Spousal disability (0 to 16)	1.8	3.0		1.2	2.6		3.3**
Score 0			55			68	
Score 1 to 2			22			16	
Score 3 to 5			13			9	
Score 6 to 16			11			7	
Characteristics of the social network							
Network size (0 to 59)	13.1	9.1		13.4	9.2		–0.5
Mean emotional support given (0 to 3)	1.2	0.9		1.5	0.9		–3.9***
Mean instrumental support given (0 to 3)	0.6	0.7		0.4	0.5		5.6***
Characteristic of the marital relationship							
Emotional support given (0 to 3)	2.4	1.0		2.4	0.9		–1.2
Instrumental support given (0 to 3)	2.5	1.0		2.4	1.1		0.7

Note: Percentages may not add up to 100% because of rounding.
a. $n = 710$.
b. $n = 379$.
*$p < .05$. **$p < .01$. ***$p < .001$. p values for difference in mean scores between men and women.

$p < .01$), giving less instrumental support to the network ($r = –.22$, $p < .001$), and giving less instrumental support to the spouse ($r = –.36$, $p < .001$). Higher levels of spousal disability among men were related to a smaller social network ($r = –.11$, $p < .01$), giving less emotional support to the network ($r = –.09$, $p < .05$), giving less instrumental support to the network ($r = –.16$, $p < .001$), and giving less emotional support to the spouse ($r = –.16$, $p < .001$). For women, higher levels of own disability were related to giving

less instrumental support to the network ($r = –.12$, $p < .05$) and giving less instrumental support to the spouse ($r = –.29$, $p < .001$). Higher levels of spousal disability among women were related only to a smaller social network ($r = –.11$, $p < .05$).

Table 2 shows the effects of own and spousal disability on social and emotional loneliness. With regard to social loneliness, results showed clear gender differences. For men, own disability had no effect on their social loneliness (Model 1), whereas spousal disability was related to higher levels of social loneliness (Model 2). The effects of own and spousal disability appeared to be independent of each other because effects remained unchanged when they were entered together in the regression equation (Model 3). The regression results of Model 3 imply, for example, that men's social loneliness is 0.36 points higher than 0.98 (constant of Model 3) when their spouse has a disability score of 6 points ($B = 0.06$, $p < .001$). About 10% of the male respondents reported that their spouse had a disability score of 6 or more (see Table 1). For women, the separate effects of own and spousal disability appeared to be significant (Model 1 and Model 2). But when entered together in the analyses (Model 3), only own disability was significantly related to higher levels of social loneliness ($B = 0.08$, $p < .001$), and the effect of spousal disability was reduced to a nonsignificant level. The proportion of explained variance of Model 3 was 3% and 4% for men and women, respectively. We also tested whether the effects of own and spousal disability on social loneliness interacted with each other, but these interactions were not significant.

We expected that the effects of own and spousal disability on social loneliness would be reduced by the characteristics of the social network. However, our results did not confirm this expectation. Results of Model 4 show that the total network size and the mean frequency of given emotional support to the social network were important predictors of social loneliness among both men and women; however, the effects of own and spousal disability remained nearly unchanged. The proportion of explained variance in Model 4 was 16% for both men and women.

With regard to emotional loneliness, results showed that own disability and spousal disability were related to higher levels of emotional loneliness for both men and women (Model 1 and Model 2). Moreover, these effects were largely independent and positive (Model 3). Thus, disability of both spouses was related to higher levels of emotional loneliness than was the case with disability of only one spouse. The standardized regression coefficients indicate that the strengths of the effects of own disability and spousal disability were about equal. The regression results of Model 3 imply, for

Table 2
Linear Regression of Social and Emotional Loneliness on Own and Spousal Disability by Gender

	Social Loneliness				Emotional Loneliness			
	Men[a]		Women[b]		Men[a]		Women[b]	
	B	β	*B*	β	*B*	β	*B*	β
Model 1								
Constant	1.08		0.73		0.62		0.83	
Age	0.03	.12**	0.01	.04	0.03	.15***	0.01	.02
Own disability	0.02	.02	0.09	.18***	0.07	.12***	0.10	.16**
R^2	.02		.04		.05		.03	
Model 2								
Constant	0.98		0.79		0.60		0.83	
Age	0.02	.09*	0.01	.06	0.03	.15***	0.01	.03
Spousal disability	0.06	.14***	0.05	.11*	0.05	.12**	0.11	.17**
R^2	.03		.02		.05		.03	
Model 3								
Constant	0.97		0.69		0.53		0.73	
Age	0.02	.08*	0.01	.03	0.03	.12**	0.00	.00
Own disability	0.02	.03	0.08	.17***	0.07	.13***	0.08	.14**
Spousal disability	0.06	.14***	0.04	.09	0.05	.13***	0.10	.15**
R^2	.03		.04		.06		.05	

(continued)

Table 2 (continued)

	Social Loneliness				Emotional Loneliness			
	Men[a]		Women[b]		Men[a]		Women[b]	
	B	β	*B*	β	*B*	β	*B*	β
Model 4								
Constant	1.02		0.70		0.55		0.73	
Age	0.01	.03	0.00	.00	0.02	.10*	0.00	–.02
Own disability	–0.01	–.01	0.08	.16**	0.07	.12**	0.09	.14**
Spousal disability	0.05	.10**	0.04	.08	0.04	.10**	0.10	.15**
Characteristics of the social network								
Network size	–0.05	–.30***	–0.03	–.24***	–0.02	–.12**	–0.01	–.08
Mean emotional support given	–0.20	–.13**	–0.22	–.15**	–0.07	–.05	–0.02	–.01
Mean instrumental support given	–0.05	–.02	–0.01	.00	–0.04	–.02	0.02	.01
Characteristics of the marital relationship								
Emotional support given	–0.04	–.03	–0.13	–.10	–0.05	–.04	–0.32	–.18**
Instrumental support given	–0.03	–.02	0.01	.01	0.03	.02	0.02	.02
R^2	.16		.16		.09		.09	

a. $n = 710$.
b. $n = 379$.
*$p < .05$. **$p < .01$. ***$p < .001$.

example, that women's emotional loneliness is 0.54 points higher when their score on own disability and spousal disability is 3 points (own disability $B = 0.08$, $p < .01$; spousal disability $B = 0.10$, $p < .001$) than the level of emotional loneliness for female respondents with neither own disability nor spousal disability (B constant = 0.73). Inspection of the distributions of the scales for own and spousal disability revealed that about 5% of the female respondents reported at least a disability score of 3 for both own and spousal disability. The proportion of explained variance in Model 3 was 6% and 5% for men and women, respectively.

A test of possible interactions between the effects of own and spousal disability on emotional loneliness showed a significant interaction for women's emotional loneliness (own disability $B = 0.05$, $p = .15$; spousal disability $B = 0.06$, $p = .12$; own disability × spousal disability $B = 0.02$, $p < .05$; $R^2 = .06$; results not shown). This interaction effect indicates that effects of own disability and spousal disability slightly reinforced each other, which becomes particularly relevant when scores of own and spousal disability are relatively high. Then, predicted levels of women's emotional loneliness are substantially higher than the sum of both main effects of Model 3.

We expected that the effects of own and spousal disability on emotional loneliness would be reduced by the characteristics of the marital relationship, but results did not confirm this expectation. Results of Model 4 show that the frequency of given emotional support to the spouse was an important predictor of emotional loneliness among women, but it did not change the effects of own or spousal disability on emotional loneliness. We also ran a model for women's emotional loneliness with the significant interaction between own and spousal disability included, but results were unchanged. For men, none of the characteristics of the marital relationship predicted the level of emotional loneliness, but the total network size did. Again, this effect of network size did not reduce the effects of own and spousal disability on men's emotional loneliness. The proportion of explained variance in Model 4 was 9% for both men and women.

Discussion

The present study addresses the impact of own disability and spousal disability on social and emotional loneliness among older married adults aged 65 and older. Results underscore the importance of considering both spouses' health for the relationship with measures of individual well-being. In addition, results show the relevance of considering gender differences in

the effects of both spouses' health on feelings of loneliness. Findings of this study have shown that, for men, it is particularly necessary to consider their wives' health when their social loneliness is at stake.

Analyses of the descriptive characteristics of the study sample showed that older married men on average experience higher levels of social loneliness but lower levels of emotional loneliness than do older married women. Men's higher levels of social loneliness can be understood by gender differences in social interactions. Men are socialized to behave independently and to present an image of being in control, by which lower levels of social support will be exchanged with sources out of the broader social network (Cutrona, 1996). Men's lower levels of emotional loneliness can be understood by gender differences in the benefits of marriage (Cutrona, 1996; Dykstra & De Jong Gierveld, 2004). Men rely more heavily on their spouses for social support (Antonucci & Akiyama, 1987), and they may also benefit from the relatively high quality of social support provided by their wives (Wheeler, Reis, & Nezlek, 1983). These gender differences in social roles may also explain the gender differences in the mean frequency of given support to the social network. Men's lower levels of given emotional support to the social network and higher levels of given instrumental support to the social network fit into the picture of traditional gender roles; the wife is doing the family work and household work inside the house, whereas the husband is doing chores outside.

Concerning the effects of own and spousal disability on social loneliness, we expected that own and spousal disability would restrict someone to maintain his or her social network, resulting in more social loneliness. We also expected that gender differences in social roles could lead to gender differences in the effects of own and spousal disability on social loneliness. The results showed clear gender differences. For men, only spousal disability was related to higher levels of social loneliness, whereas for women, mainly own disability was related to higher levels of social loneliness. However, results showed that the effects of own and spousal disability were not reduced by the size of the social network or the frequency of emotional and instrumental support given to the network.

Concerning emotional loneliness, we expected that own and spousal disability would negatively influence the marital relationship, resulting in higher levels of emotional loneliness. Results showed that, for both men and women, own disability and spousal disability were related to higher levels of emotional loneliness. For men, effects of own and spousal disability were cumulative, and for women, the effects of own and spousal disability slightly reinforced each other. However, the effects of own and spousal

disability on emotional loneliness were not reduced by the frequency of given emotional and instrumental support to the spouse.

The fact that effects of own and spousal disability on social and emotional loneliness were not reduced by our measures of the social network and the marital relationship raises the question of whether we used the appropriate characteristics to explain this link. For the sake of completeness, we also tested the receipt of support as explanatory variables, but results remained unchanged. Our indicators probably were too broad as characteristics of the social network and the marital relationship. More specific aspects such as companionship and negative relational experiences such as worrying about others (Stevens & Westerhof, 2006) might have been more appropriate to explain higher levels of loneliness with more disability. Unfortunately, these specific aspects were not available in our data, and future research needs to focus on these aspects. At present, we can conclude only that the size of the social network and the emotional support exchanges are important predictors of social and emotional loneliness but that they do not explain the link between own and spousal disability on the one side and social and emotional loneliness on the other.

Despite the fact that we found no clear explanations about the link between disability and feelings of loneliness, a number of conclusions can be drawn. First, the effects of own and spousal disability on social and emotional loneliness are rather robust because they remained unchanged after controlling for various characteristics. Second, it can be concluded that women's health is most relevant for both men and women' social loneliness. Or in other words, women's disability appeared to play a crucial role with respect to feelings of social loneliness among older married couples. Third, the results concerning emotional loneliness correspond with prior studies that have already found evidence for cumulative effects of each spouse's health condition on marital happiness (Booth & Johnson, 1994) and on psychological distress (Hagedoorn et al., 2001). This correspondence underscores the reliability of our results; it is plausible that emotional loneliness shows more correspondence with marital happiness and psychological distress than social loneliness. So, in general, it can be concluded that disabling health problems of both spouses have at least cumulative and sometimes even reinforcing effects on emotional aspects of individual well-being.

The relatively low proportions of variance explained by the effects of own and spousal disability indicate that there is relatively much variance around the estimated coefficients. In general, this indicates that factors other than disability may be more important in predicting levels of loneliness. Nevertheless, the estimated effects of own and spousal disability should not

be neglected because the effects are substantial. For example, the estimated level of men's social loneliness when their wives suffer from severe disability can be compared with half of the difference in social loneliness between older men in their first marriage and those without a partner after divorce (Van Tilburg, 2007).

A limitation of this study concerns the assessment of own and spousal disability. Respondents reported about their own disability and their spouse's disability, which might have caused a difference in the validity between own and spousal disability. Although respondents were asked to evaluate concrete abilities, reporting about one's own abilities might have been evaluated more positively than abilities of one's spouse. An underestimation of own disability could have resulted in an overestimation of the effect of own disability on loneliness compared to the effect of spousal disability. Moreover, these possible measurement errors could also have been different for men and women. However, our results cannot be confused by a possible interaction of measurement errors and gender because we did separate analyses for men and women.

Another limitation is the small number of respondents who reported own or spousal disability. The skewed distributions of the disability scales indicate that the upper end of the distribution has a relatively strong influence on the regression coefficient. Thus, the regression coefficients of the effects of own and spousal disability on loneliness are largely determined by a small number of observations. Therefore, the results of the regression analysis need to be carefully interpreted. However, testing of the assumptions of linear regression analysis indicated no serious problems. Scatter plots of the residuals showed that the assumption of homoscedasticity (constant variance of error terms) was not substantially violated. In conclusion, although the results are not based on a large number of observations, the coefficients can be considered good estimates.

A third limitation is that we restricted our sample to older adults who were married with their partner and who were in their first marriage. The great majority of the original sample (88%) met those criteria. We excluded respondents with deviant partner history (e.g., remarried after widowhood or divorce, unmarried cohabiting) from our analyses because we wanted to rule out possible interactions of partner history on the relationship between disability and loneliness. Because of the small numbers of respondents, it was not possible to test these possible interactions. But speculating about this, we might assume for instance that the effects of own and spousal disability on loneliness are stronger for those who are repartnered than for those in their first marriage. This assumption can be based on the finding

that repartnered older adults, compared to those in their first marriage, are less integrated in their social network (De Jong Gierveld & Peeters, 2003) and probably need to rely more strongly on each other. However, this remains speculation, and future research needs to prove whether this line of reasoning is correct.

Overall, this study draws attention to the fact that older married individuals are not totally prevented from experiences of loneliness by the presence of a spouse. Moreover, findings of the present study should alert researchers that for some aspects of individual well-being, it could be more relevant to investigate the health condition of the spouse than someone's own health condition. Results of the present study raise questions about the precise mechanism underlying the relationship between both spouses' health and indicators of social well-being. Further research needs to focus on these mechanisms to provide policy makers with concrete recommendations for improving the individual well-being of older married adults. In sum, this study has shown that older adults with a marital partner should not be overlooked. Sharing problems may mostly halve problems, but with regard to health problems among older couples, it seems right to state that a problem shared is a problem doubled.

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